<u>In the Claims</u>:

Please cancel claims 1-5, 7-12, 14 and 18-22, without prejudice, as follows:

1-5.   (Cancelled)

6.   (Previously Presented)   An   information   recording   and reproducing apparatus for recording and reproducing information onto/from a magnetic recording medium, comprising:

a data recording unit which inserts a predetermined specific code train into at least two or more portions including head and last portions of data and records the data onto the medium upon data recording; and

a data reproducing unit which separates a head reproducing signal by using clocks and thereafter, executes a clock extraction and an amplitude correction by using a signal corresponding to said specific code train upon data reproduction,

wherein said data reproducing unit obtains a signal mean value and a standard deviation and an autocorrelation of noises by using the signal corresponding to said specific code train and uses them in a likelihood calculation of a data decoding.

7-12. (Cancelled)

13. (Previously Presented)   A signal decoding circuit for recording and reproducing information onto/from a magnetic recording medium, comprising:

a data recording unit which inserts a predetermined specific code train into at least two or more portions including head and last portions of data and records the data onto the medium upon data recording; and

a data reproducing unit which separates a head reproducing signal by using clocks and thereafter, executes a clock extraction and an amplitude correction by using a signal corresponding to said specific code train upon data reproduction,

wherein said data reproducing unit obtains a signal mean value and a standard deviation and an autocorrelation of noises by using the signal corresponding to said specific code train and uses them in a likelihood calculation of a data decoding.

14-22. (Cancelled)

23. (Previously Presented)   An information recording and reproducing method of recording and reproducing information onto/from a magnetic recording medium, comprising the steps of:

inserting a predetermined specific code train into at least two or more portions including head and last portions of data and recording the data onto the medium upon data recording; and

separating a head reproduced signal by using clocks and, thereafter, executing a clock extraction and an amplitude correction by using a signal corresponding to said specific code train upon data reproduction,

wherein upon data reproduction, a signal mean value and a standard deviation and an autocorrelation of noises are obtained by using the signal corresponding to said specific code train and used in a likelihood calculation of a data decoding.